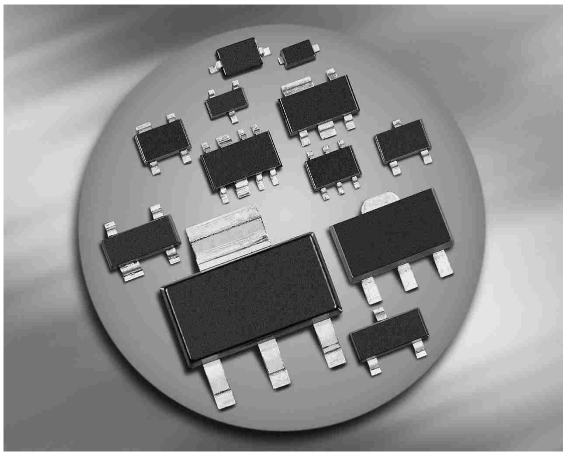
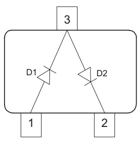
Silicon Switching Diode

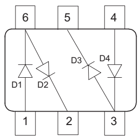
- For high-speed switching applications
- Series pair configuration



BAV99
BAV99F
BAV99T
BAV99W

BAV99S
BAV99U





Type	Package	Configuration	Marking
BAV99	SOT23	series	A7s
BAV99F*	TSFP-3	series	A7s
BAV99S	SOT363	dual series	A7s
BAV99T	SC75	series	A7s
BAV99U	SC74	dual series	A7s
BAV99W	SOT323	series	A7s

* Preliminary

Maximum Ratings at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Value	Unit
Diode reverse voltage	V_R	80	V
Peak reverse voltage	V_{RM}	85	
Forward current	I_F	200	mA
Non-repetitive peak surge forward current	I_{FSM}		A
t = 1 µs		4.5	
t = 1 ms		1	
t = 1 s, single		0.5	
t = 1 s, double		0.75	
Total power dissipation	P_{tot}		mW
BAV99, $T_S \leq$ 28°C		330	
BAV99F, $T_S \leq$ tbd		250	
BAV99S, $T_S \leq$ 85°C		250	
BAV99T, $T_S \leq$ 104°C		250	
BAV99U, $T_S \leq$ 113°C		250	
BAV99W, $T_S \leq$ 110°C		250	
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ... 150	

Thermal Resistance

Parameter	Symbol	Value	Unit
Junction - soldering point[1)]	R_{thJS}		K/W
BAV99		≤ 360	
BAV99F		≤ tbd	
BAV99S		≤ 260	
BAV99T		≤ 185	
BAV99U		≤ 150	
BAV99W		≤ 160	

[1]For calculation of R_{thJA} please refer to Application Note Thermal Resistance

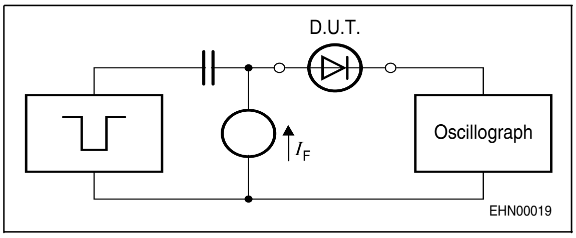
Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
DC Characteristics					
Breakdown voltage $I_{(BR)}$ = 100 µA	$V_{(BR)}$	85	-	-	V
Reverse current	I_R				µA
V_R = 70 V		-	-	0.15	
V_R = 25 V, T_A = 150 °C		-	-	30	
V_R = 70 V, T_A = 150 °C		-	-	50	
Forward voltage	V_F				mV
I_F = 1 mA		-	-	715	
I_F = 10 mA		-	-	855	
I_F = 50 mA		-	-	1000	
I_F = 100 mA		-	-	1200	
I_F = 150 mA		-	-	1250	

Electrical Characteristics at T_A = 25°C, unless otherwise specified

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
AC Characteristics					
Diode capacitance V_R = 0 V, f = 1 MHz	C_T	-	-	1.5	pF
Reverse recovery time I_F = 10 mA, I_R = 10 mA, measured at I_R = 1mA, R_L = 100 Ω	t_{rr}	-	-	4	ns

Test circuit for reverse recovery time

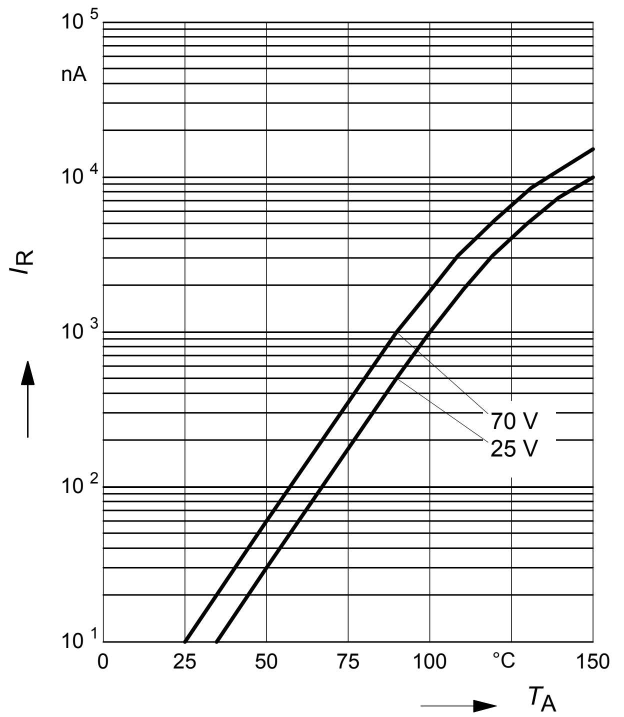


Pulse generator: t_p = 100ns, D = 0.05,
t_r = 0.6ns, R_i = 50Ω

Oscillograph: R = 50, t_r = 0.35ns
$C \leq$ 1pF

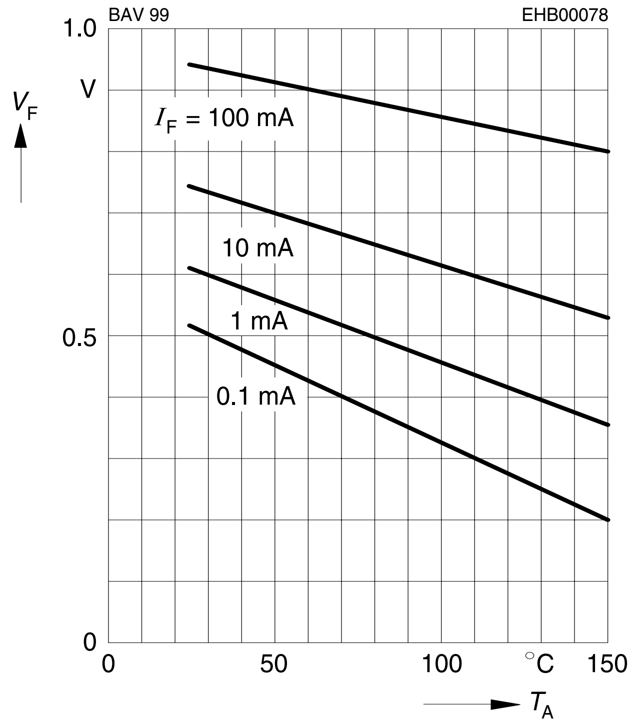
Reverse current $I_R = f(T_A)$

V_R = Parameter



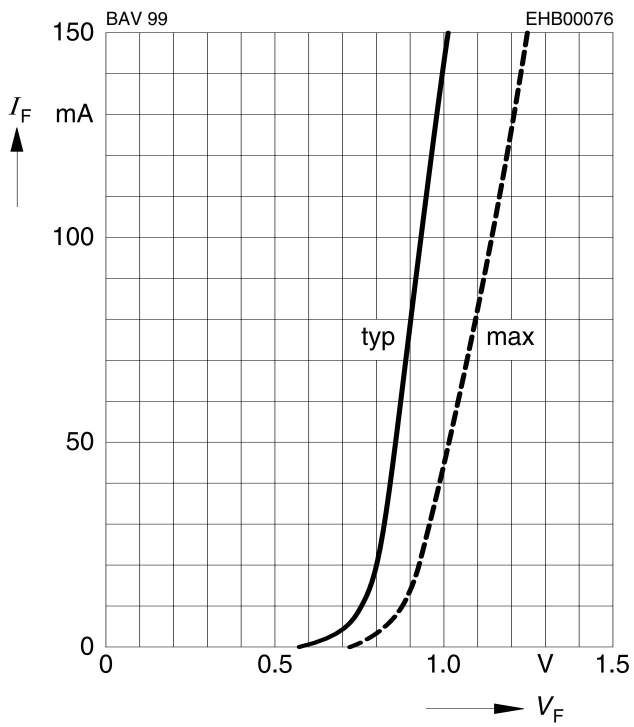
Forward Voltage $V_F = f(T_A)$

I_F = Parameter



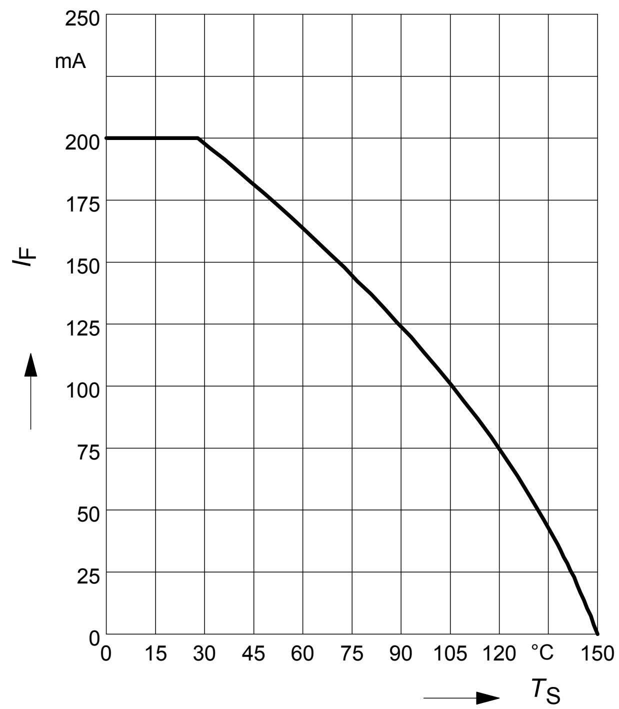
Forward current $I_F = f(V_F)$

T_A = 25°C



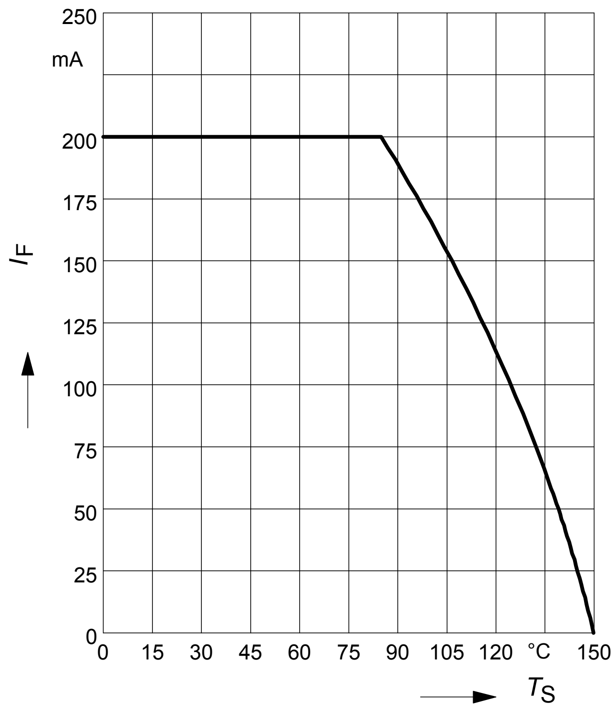
Forward current $I_F = f(T_S)$

BAV99



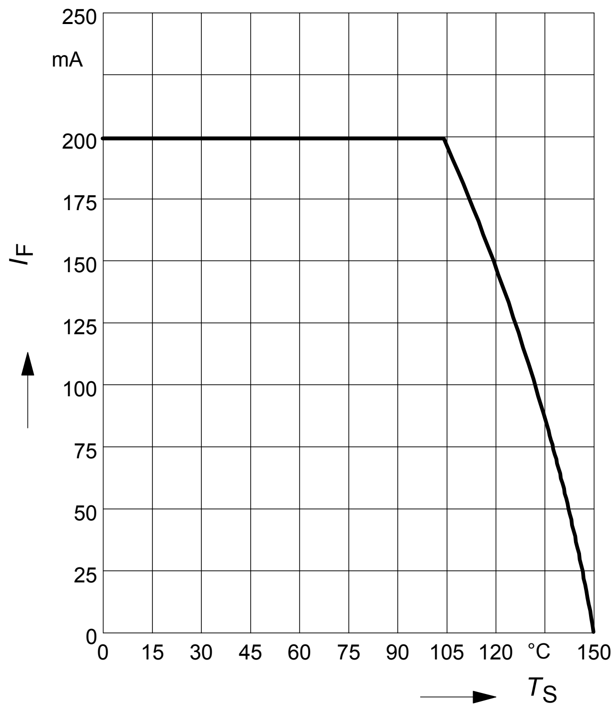
Forward current $I_F = f\ (T_S)$

BAV99S



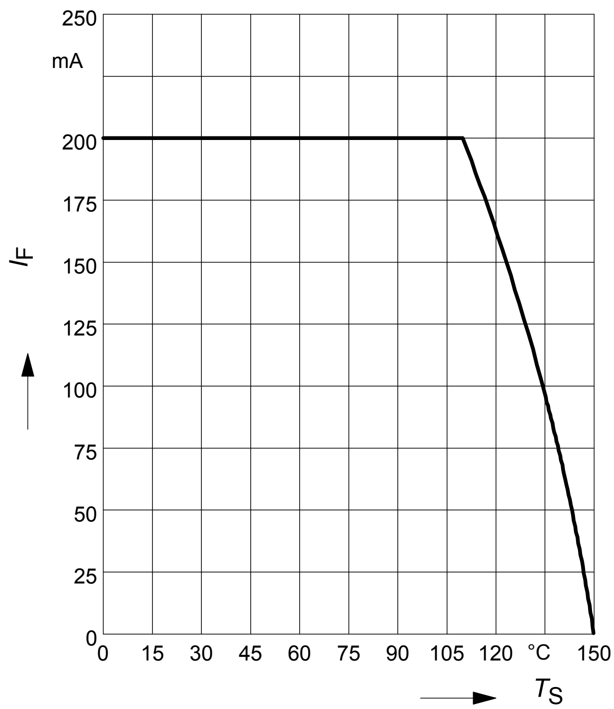
Forward current $I_F = f\ (T_S)$

BAV99T



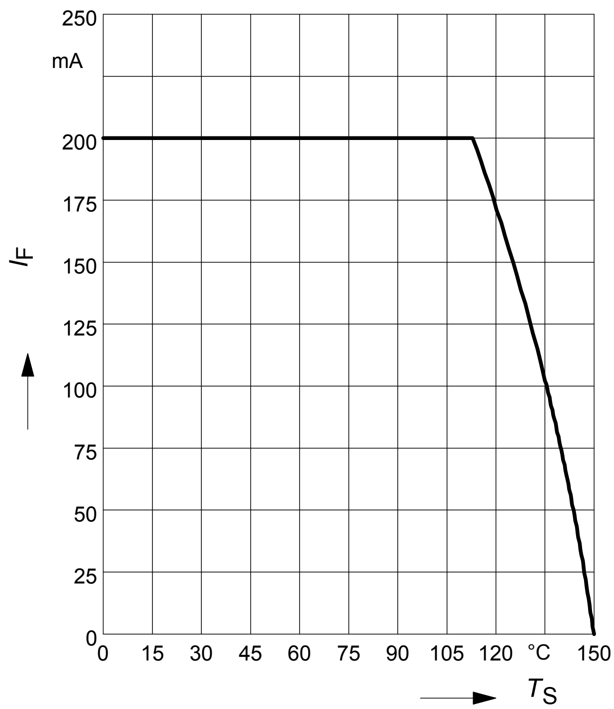
Forward current $I_F = f\ (T_S)$

BAV99U



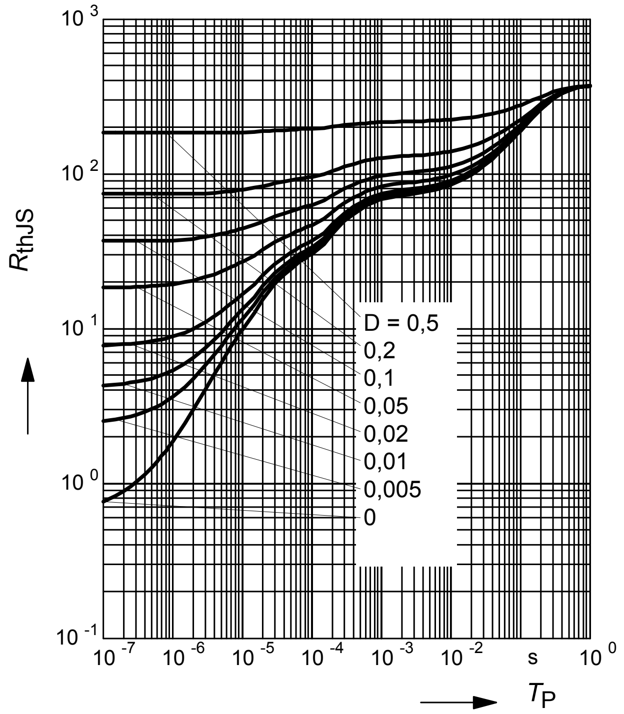
Forward current $I_F = f\ (T_S)$

BAV99W



Permissible Puls Load $R_{thJS} = f\ (t_p)$

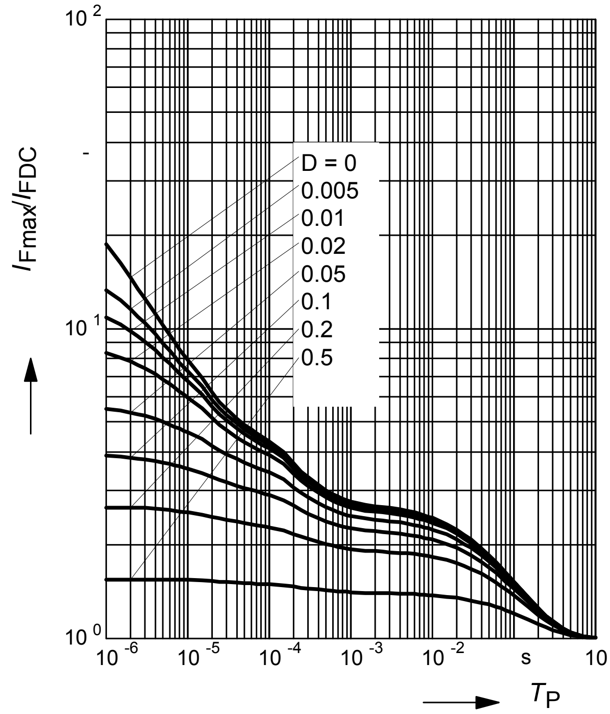
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Permissible Pulse Load

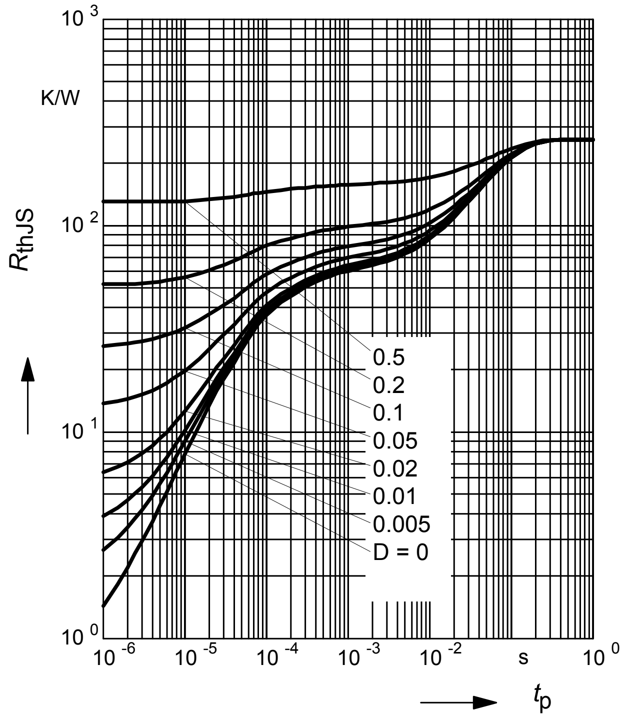
$I_{Fmax}/\ I_{FDC} = f\ (t_p)$

BAV99



Permissible Puls Load $R_{thJS} = f\ (t_p)$

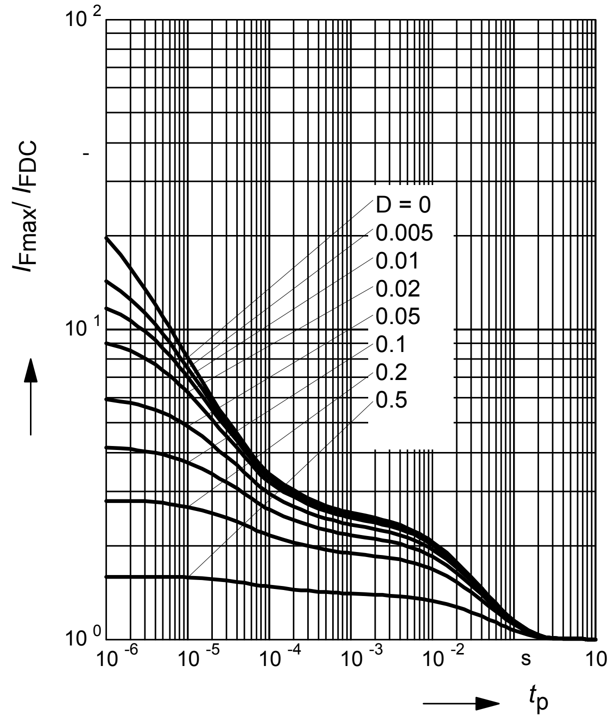
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Permissible Pulse Load

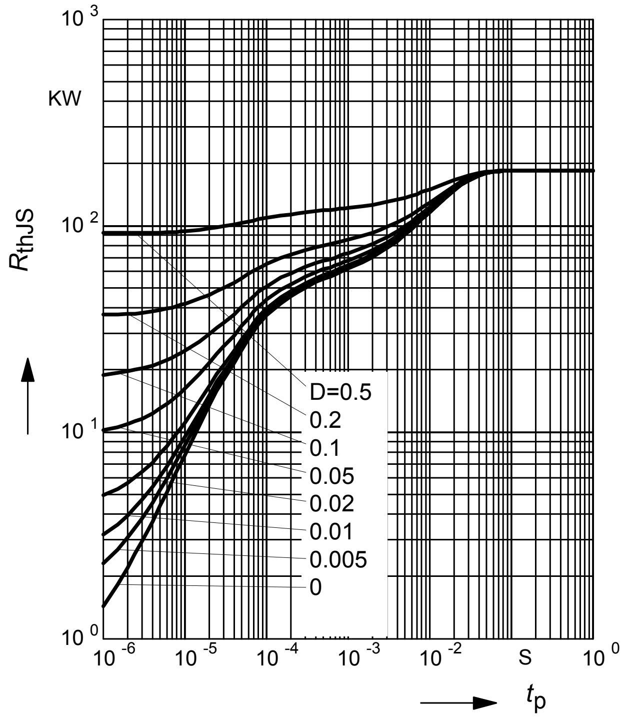
$I_{Fmax}/\ I_{FDC} = f\ (t_p)$

BAV99S



Permissible Puls Load $R_{thJS} = f\ (t_p)$

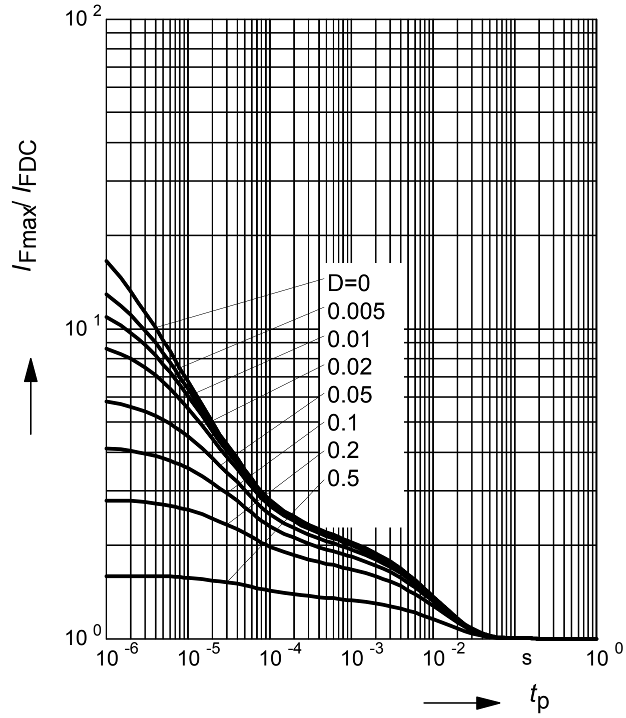
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Permissible Pulse Load

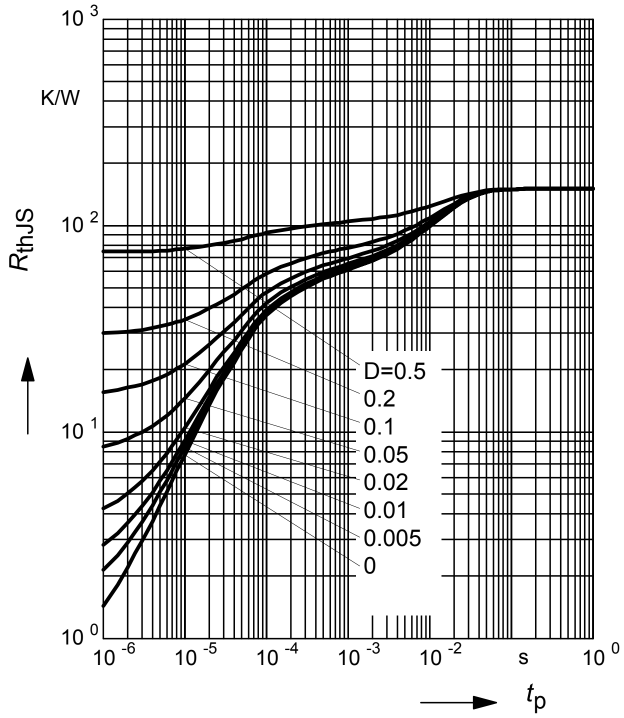
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAV99T



Permissible Puls Load $R_{thJS} = f\ (t_p)$

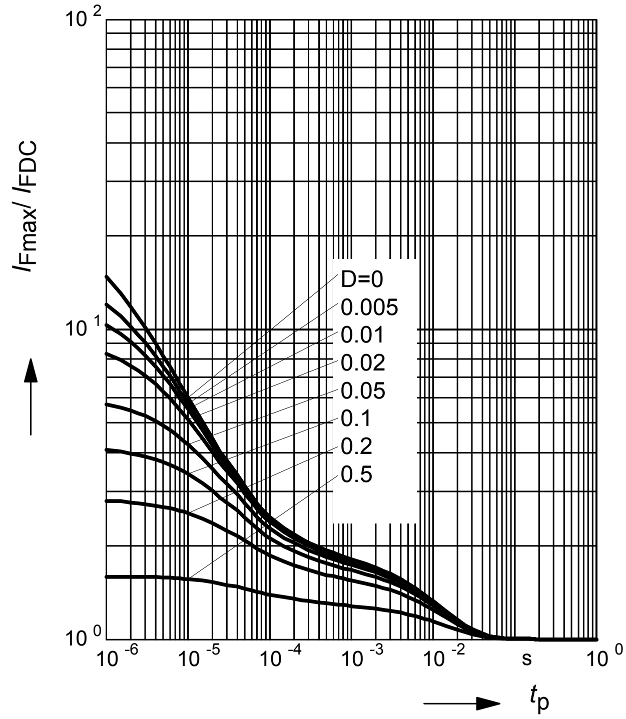
BAV99U



Permissible Pulse Load

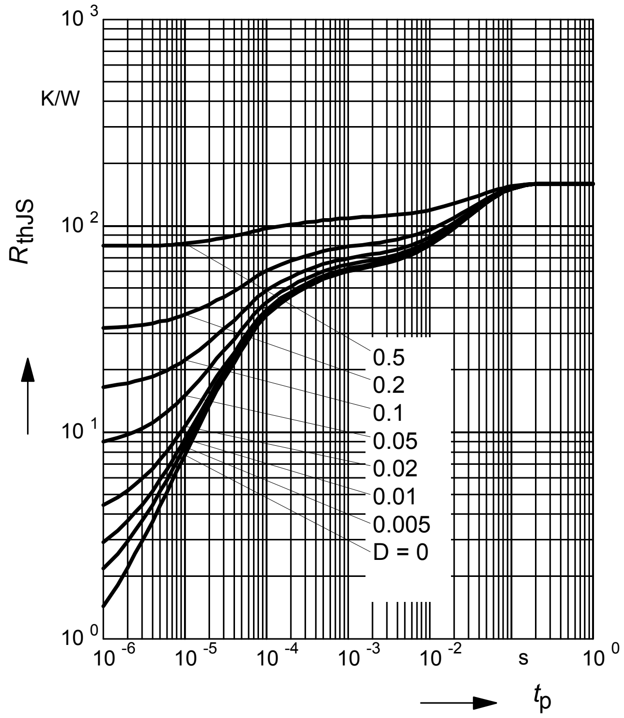
$I_{Fmax}/ I_{FDC} = f\ (t_p)$

BAV99U



Permissible Puls Load $R_{thJS} = f\ (t_p)$

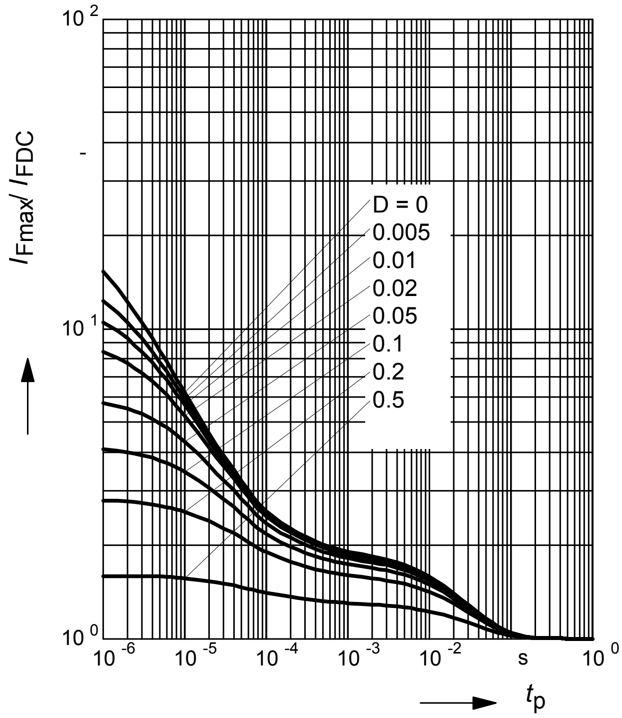
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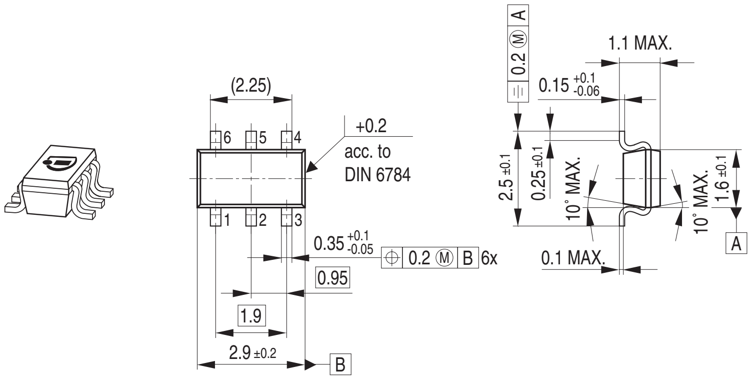
Permissible Pulse Load

$I_{Fmax}/\ I_{FDC} = f\ (t_p)$

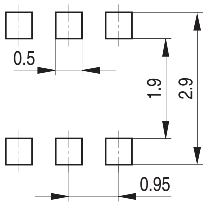
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Package Outline



Foot Print



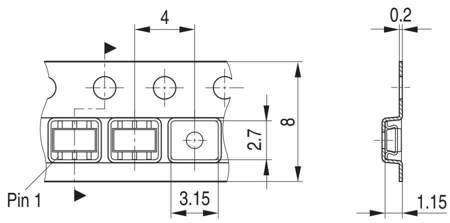
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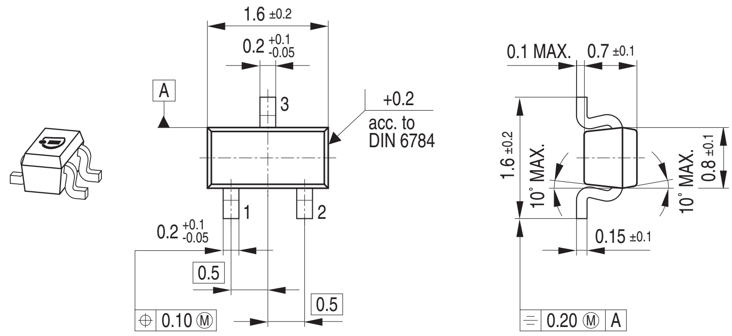
Example

Packing

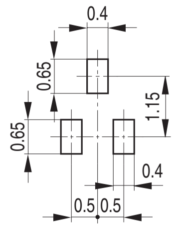
Code E6327: Reel ø180 mm = 3.000 Pieces/Reel
Code E6433: Reel ø330 mm = 10.000 Pieces/Reel



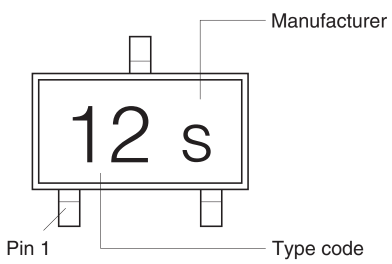
Package Outline

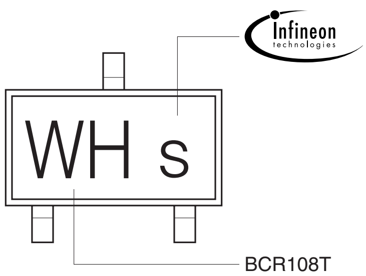


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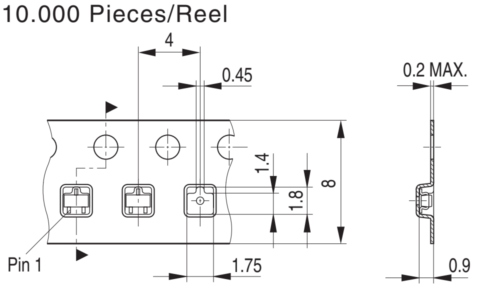




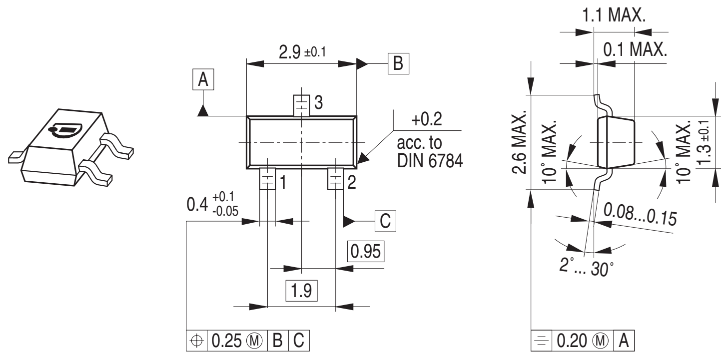
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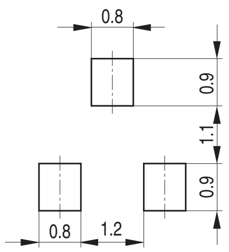
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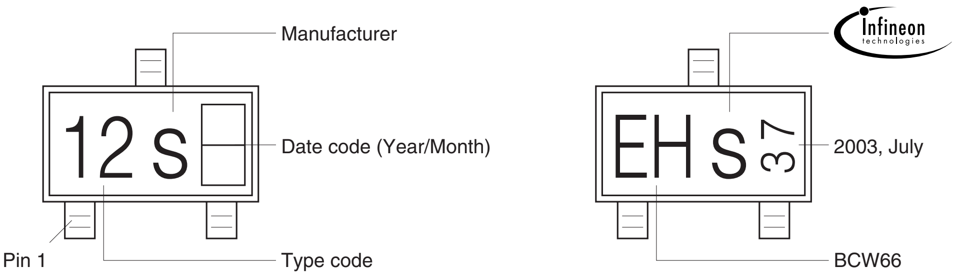
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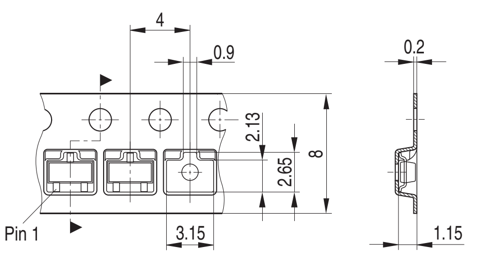
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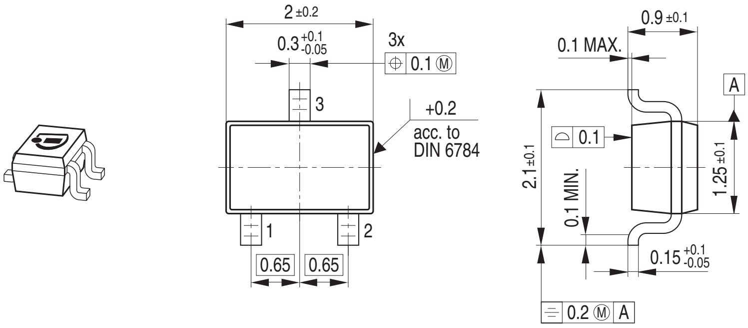
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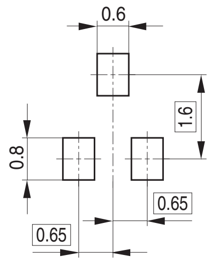
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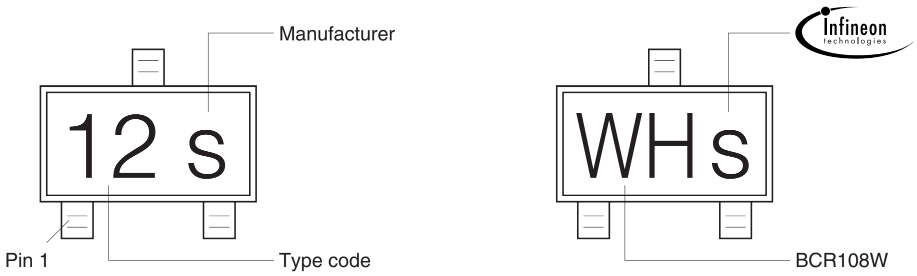
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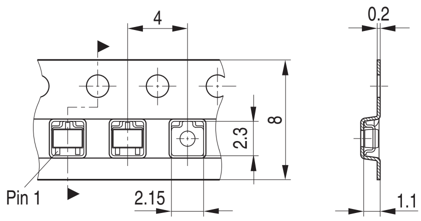
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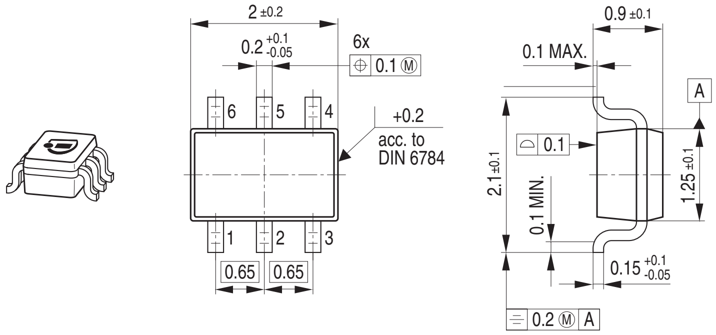
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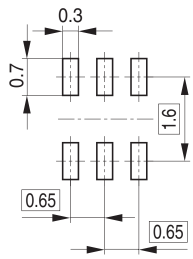
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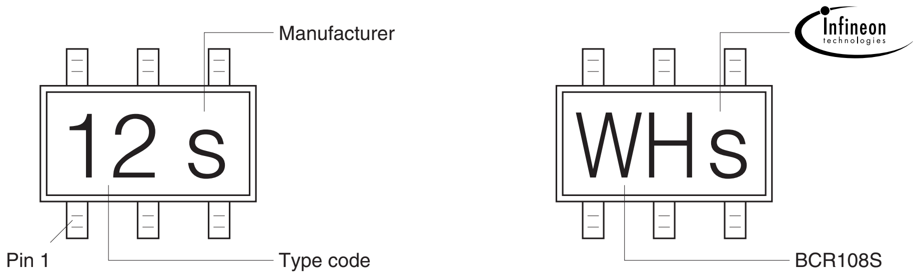
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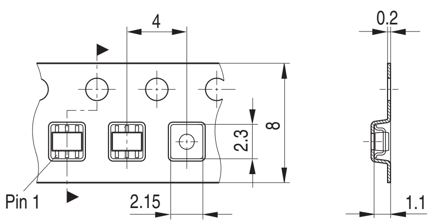
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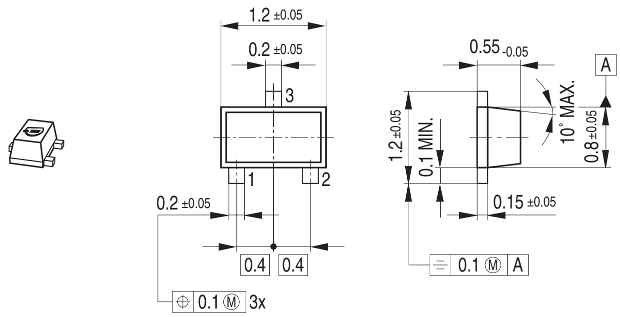
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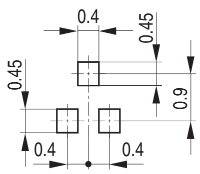
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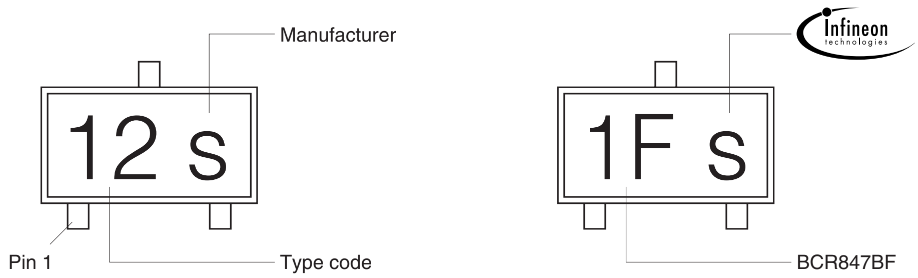
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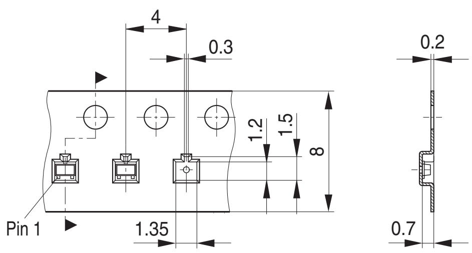
Marking Layout



Example

Packing

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